Course Objectives: Evidence of Learning

When you begin creating a course, it is important to to design with the end in mind – what do you want your students to learn? The best way to approach this is to start by writing measurable learning objectives. Effective learning objectives use action verbs to describe what you want students to be able to do by the end of the course or unit. Aligning assessments with course expectations is much easier when you have written measurable objectives from the beginning. **The key is to write objectives that show evidence of learning that link to an assessment or assignment (see chart below).**

Bloom's Taxonomy of educational objectives was created as a way of expressing qualitatively different types of thinking. It is now used as a course planning tool and is one of the most universally applied models across all levels of education and in all areas of study. The major idea of Bloom's taxonomy is to assist in establishing what educators want their students to be able to know or do upon completion of a course or unit/module of instruction. Anderson and Krathwohl (2001) adapted Bloom's model employ more outcome-oriented language into workable objectives for both course and unit objectives.

Using Bloom's Taxonomy to Align Learning Objectives with Assignments

Levels of Learning	Verbs for Course Learning Objectives	Ideas for Assignments
Creating	Design, construct, plan, invent, formulate, generate	Create something "new." This varies by discipline. Is there something your students can invent/research that will contribute to their field of study?
Evaluating	Assess, critique, experiment, judge	Conduct an experiment, synthesize and present results, critique another person's results, judge validity
Analyzing	Compare, organize, integrate, categorize, find, distinguish	Analyze data, locate resources, write an annotated bibliography
Applying	Implement, use, execute, demonstrate, determine, discover	Perform a calculation, draw a curve, create a table, respond to a theory
Understanding	Interpret, summarize, classify, compare, explain	Interpret a journal article, write a lit review, summarize new info (a reading, a lecture, or work of peers), respond to a case study
Remembering	Indentify, list, describe, recall	Quizzes or self assessments: multiple choice, fill-in the blank, true/false, short answer

Source: Modified from http://ctlt.jhsph.edu/resources/views/content/files/122/BloomsTaxonomy%20and%20Objectives.pdf

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Taxonomy Representing a Hierarchy from Less to More Complex Learning

LEVEL	VERBS	EXAMPLES
REMEMBER The learner must be able to recall information such as dates events, places, definitions, formulas.	Arrange, Define, Describe, Detail, Draw, Duplicate, Identify, Indicate, Inventory, Label, List Locate, Match, Name, Outline, Pick, Point, Pronounce, Quote, Recall, Recite, Recognize, Record, Relate, Repeat, Reproduce, Restate, State, Underline	**The student will be able to:** • Label the parts of the heart. • Outline the steps in the writing process. • List the steps taken to make a kite. • Recite the Gettysburg Address.
UNDERSTAND The learner must be able to grasp the meaning of the information express it in their own words and/or cite examples.	Classify, Confirm, Contrast, Convert, Decipher, Defend, Designate, Differentiate, Equate, Estimate, Express, Extend, Extrapolate, Generalize, Give, Examples, Group, Infer, Interpret, Liken, Order, Para-phrase, Predict , Reorder, Rephrase, Tell, Rewrite, Sort, Specify, Substitute, Translate	**The student will be able to:** • Defend a position about creating flat taxes. • Give an example of an adjective. • Specify the role of project management in an organization.
APPLY The learner must be able to use or apply knowl-edge or skills to new situations. The learner must be able to use in-formation and knowl-edge to solve a problem, answer a question or perform another task.	Add, Allocate, Alter, Apply, Calculate, Change, Choose, Complete, Compute, Conduct, Coordinate, Demonstrate, Determine, Direct , Discover, Divide, Dramatize, Draw, Employ, Execute, Formulate, Gather, Graph, Make, Manipulate, Model, Multiply, Operate, Perform, Present, Provide Recount, Report, Schedule, Show, Sketch, Subtract, Use, Utilize	**The student will be able to:** • Choose criteria to assess change readiness. • Demonstrate the proper technique for drawing blood. • Graph the results of the market analysis.
ANALYZE The learner must be able to break down knowledge into parts and show and explain the relationships among the parts.	Analyze, Appraise, Associate, Break Down, Criti-cize, Discern, Diagram, Discriminate, Dissect, Dis-tinguish Elect, Establish, Explain, Expound, Illus-trate, Inspect, Profile, Question, Refute, Separate, Simplify, Subdivide, Summarize, Test	**The student will be able to:** • Explain the ramifications of sexual harassment in the workplace. • Appraise potential suppliers according to organizational needs. • Distinguish between ethical and unethical behavior in a professional setting.
EVALUATE The learner must be able to judge or assess the value of material and methods for a given purpose.	Argue, Assess, Attack, Champion, Compare and Contrast, Conclude, Critique, Debate, Decide, De-duce, Diagnose, Evaluate, Forecast, Improve, Judge, Justify, Measure, Prioritize, Prove, Rank, Rate, Recommend, Resolve, Revise, Score, Select, Solve, Support, Value, Verify, Weigh	**The student will be able to:** • Support the value of diversity in a pro-ject team. • Recommend a course of action for an organizational change. • Resolve ethical issues that plague re-searchers conducting experiments on animals.
CREATE The learner must be able to pull together parts of knowledge to form a new whole and build relationships for new situations.	Assemble, Assimilate, Categorize, Collect ,Com-bine, Compile, Compose, Condense, Construct, Create, Design, Derive, Develop, Devise, Elabo-rate, Expand, Generate, Guide, Hypothesize, Inte-grate, Invent, Manage, Modify, Originate, Organ-ize, Plan, Prepare, Prescribe, Produce, Propose, Rearrange, Reconstruct, Reorganize, Rework, Set Up, Synthesize, Theorize, Transform, Write	**The student will be able to:** • Devise a plan to deal with violence in your classroom. • Design an instructional unit which meets the needs of online students. • Modify the instructional design process.

Source Modified from http://tinyurl.com/cynhy9w

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Two Types of Learning Objectives

    (1) course-level learning objectives
    (2) unit/module/week objectives.

In online courses, it is especially important that the students are aware of the course objectives and how they are going to achieve these objectives to successfully complete the course. The unit/module level objectives provide checkpoints or stepping stones towards successful achievement of the course objectives.

Objective Tips:
- The module/unit/weekly objectives should be more specific than the overall course objectives (although there may be some overlapping at times).
- If you have a higher-level course objective, you many need several lower-level module/unit/weekly objectives to build competencies to reach the higher-level course objective (see Bloom's Taxonomy above for an explanation of lower-level or higher-level objectives).
- The module/unit/weekly learning objectives should be consistent with the course-level objectives and also be written in measurable terms so that the student knows exactly what he/she should learn and so that the instructor has a clear target for assessing learning.
- Module/unit/weekly objectives may be written by the instructor or taken directly from the textbook. The module/unit level objectives must be accessible from within the course -- even if they appear in the textbook. Textbooks often tend to provide too many objectives so it is important to focus only on those that you plan to look for evidence of learning in your assessments or assignments.

Steps as a Guide to Writing Measurable Learning Objectives

1. Identify the noun, or thing you want students to learn.
   - Example: seven steps of the research process
2. Identify the level of knowledge you want. In Bloom's Taxonomy, there are six levels of learning. It's important to choose the appropriate level of learning, because this directly influences the type of assessment you choose to measure your students' learning.
   - Example: to know the seven steps of the research process (understand level)
3. Select a verb that is observable to describe the behavior at the appropriate level of learning. More verbs listed here: http://uwf.edu/cutla/slo/actionwords.pdf
   - Example: Describe these steps
4. Add additional criteria to indicate how or when the outcome will be observable to add context for the student.
   - Describe the seven steps of the research process when writing a paper.

Following are some examples of learning objectives and how to revise them:

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Course level outcome examples:

- Original version: *Understand the American criminal justice system.*
- Revised version: *Describe the history of the American criminal justice system.*

Note: Understand is not a measurable verb. However the intent of the instructor was to have the students be able to describe, which is measurable.

- Original version: *Describe and create a social media plan for your organization.*
- Revised version: *Create a social media plan for your organization.*

Note: Describe and create are two different levels of learning, and it's strongly suggested that you avoid having more than one action verb. Create is a higher level of learning than describe, therefore it can be assumed that you will be able to describe the process prior to applying it.

Source: http://teachonline.asu.edu/2012/07/writing-measurable-learning-objectives/

Unit level examples:

- Original version: *Understand elements of editing.*
- Revised version: *Identify elements of editing, including composition, setting, and lighting.*

Note: Understand is not a measurable verb, and it was too broad for a unit level objective. Therefore, the focus was narrowed.

- Original version: *Complete the quiz.*
- Revised version: None

Note: Complete the quiz is an action item for the student, not a learning objective. If your assessment is being used to meet your objective, then you will want to write a measurable objective that describes the content of the assessment.

Learning objectives should be measurable and the assessments should align with the learning objectives. For example, if your learning objective has the action verb "identify", then you do not want to have an assessment that is above that level of learning, such as analyzing the topic. On the other hand, if you have an application level verb, such as "design", then you do not want to assess the learning objective with only a multiple choice, knowledge level quiz.

When creating assessments, look at the action verb being used for your learning objective and the level of learning to apply.

Source: http://teachonline.asu.edu/2012/07/writing-measurable-learning-objectives/